

VS Id#	Vital Sign Category			Vital Sign	Vital Sign Rank (0-5)
T13	Terrestrial Ecosystems	Vegetation	Population	Native Plant Species Protection (T, E, S-o-C species)	4.0
T16	Terrestrial Ecosystems	Vegetation	Population	Established Alien Species - Plants	4.0
T17	Terrestrial Ecosystems	Vegetation	Population	Alien Incipient Invasive Plants	3.7
P31	Water Quality			Surface Water Quality - Toxics & contaminants	3.7
T6	Terrestrial Ecosystems	Vegetation	Community	Terrestrial Plant Biodiversity	3.6
P22	Water Quality			Surface Water Quality Core parameters	3.6
T8	Terrestrial Ecosystems	Vegetation	Community	Recovery/Change of Native Vegetation with Alien Plant Control	3.5
T26	Terrestrial Ecosystems	Consumers	Population	Seabirds (including T & E spp.)	3.5
T7	Terrestrial Ecosystems	Vegetation	Community	Long-term Plant Succession	3.5
P25	Water Quality			Surface Water Quality Supplemental parameters	3.5
F2	Freshwater Ecosystems	Consumers	Community	Aquatic and Riparian Species (vertebrate and invertebrate) Biodiversity	3.5
P7	Climate & Air Quality			Weather & Climate	3.4
T34	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Predatory Terrestrial Vertebrates	3.4
H4	Land Use			Alien Invasive Species Points of Entry	3.4
H6	Land Use			Land Use(s) Within & Surrounding Parks	3.4
T27	Terrestrial Ecosystems	Consumers	Population	Shorebirds and Waterbirds (including T & E spp.)	3.3
H9	Park Use & Activities			Footprint & Visitor Use Patterns	3.3
T37	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Predatory Terrestrial Vertebrate	3.3
P21	Water Quality			Marine Water Quality Core parameters	3.3
T19	Terrestrial Ecosystems	Consumers	Community	Terrestrial Vertebrate (including off-shore islets refugia) Biodiversity	3.3
M20	Marine Ecosystems	Water column (motile)	Population	Marine Species Protection (T, E, S-o-C species)	3.3
T21	Terrestrial Ecosystems	Consumers	Community	Recovery/change of Native Wildlife and habitats (including wetlands) with restoration of native vegetation	3.2
P18	Soil, Water, & Nutrient Dynamics			Wetlands (incl. anchialine pools) hydrology	3.2
P39	Geology	Landforms		Coastal Shoreline Change (erosion & accretion)	3.2
T25	Terrestrial Ecosystems	Consumers	Population	Invertebrate Charismatic or Species of Concern	3.2
M19	Marine Ecosystems	Water column (motile)	Population	Fish Growth/Size and Age Structure, and Recruitment	3.2
M22	Marine Ecosystems	Intertidal	Community	Intertidal Biodiversity - Vertebrates, Invertebrates, and Algae	3.1
H16	Management Zones			Management Zone uses	3.1
T23	Terrestrial Ecosystems	Consumers	Population	Forest Birds and Bats (includes T & E spp.)	3.1
H7	Park Use & Activities			Litter/debris	3.1
P8	Climate & Air Quality			Extreme events (weather & ocean)	3.0
H5	Land Use			Water Use(s) Within & Surrounding Parks	3.0
P30	Water Quality			Marine Water Quality - Toxics & contaminants	3.0
M26	Marine Ecosystems	Intertidal	Population	Intertidal Marine Invertebrates, Fish, and Algae	3.0
P12	Soil, Water, & Nutrient Dynamics			Soil Erosion	2.9
P28	Water Quality			Surface Water Quality - Microbiology	2.9
T18	Terrestrial Ecosystems	Consumers	Community	Terrestrial Invertebrate Biodiversity	2.9
F5	Freshwater Ecosystems	Consumers	Population	Established Alien Species - Predatory Freshwater (vertebrate and invertebrate)	2.9
P26	Water Quality			Ground Water Quality - Microbiology	2.9
T29	Terrestrial Ecosystems	Consumers	Population	Terrestrial Invertebrate Species Protection (T, E, S-o-C Species)	2.9
P1	Climate & Air Quality			Visibility	2.9
P24	Water Quality			Marine Water Quality Supplemental parameters	2.9
M16	Marine Ecosystems	Water column (motile)	Population	Established Turtle Disease & Pathogens	2.9
T14	Terrestrial Ecosystems	Vegetation	Population	Established Plant Disease & Pathogens	2.9
P32	Water Quality			Marine Water Quality - macroinvertebrates	2.8
P20	Water Quality			Ground Water Quality Core parameters	2.8
P29	Water Quality			Ground Water Quality - Toxics & contaminants	2.8
F6	Freshwater Ecosystems	Consumers	Population	Alien Incipient Invasives - Predatory Freshwater (vertebrate and invertebrate)	2.8
M18	Marine Ecosystems	Water column (motile)	Population	Water Column Marine Invertebrates	2.8
M12	Marine Ecosystems	Benthic	Population	Alien Incipient Invasives - Benthic Marine	2.8
M3	Marine Ecosystems	Benthic	Community	Benthic Marine Invertebrates and Algae Biodiversity	2.8
P27	Water Quality			Marine Water Quality - Microbiology	2.8
M13	Marine Ecosystems	Water column (motile)	Community	Water Column Marine Vertebrates and Invertebrates Biodiversity	2.8
M4	Marine Ecosystems	Benthic	Community	Subtidal - Hard Bottom (coral reef, colonized basalt, etc.)	2.7
M7	Marine Ecosystems	Benthic	Population	Benthic Marine Invertebrates and Algae	2.7
P6	Climate & Air Quality			Solar radiation	2.7
P17	Soil, Water, & Nutrient Dynamics			Flowing surface water hydrology	2.7
M1	Marine Ecosystems	Benthic	Landscape	Coral Growth (erosion & accretion)	2.7
M6	Marine Ecosystems	Benthic	Population	Benthic Reef Fisheries / Collected species (inverts: sea cucumbers, pololo worm, corals; etc)	2.7
M11	Marine Ecosystems	Benthic	Population	Established Alien Species - Benthic Marine	2.7
T28	Terrestrial Ecosystems	Consumers	Population	Terrestrial Invertebrates Associated with Habitat Quality	2.7
H2	Viewscapes / Lightscapes			Viewsheds	2.7
H3	Viewscapes / Lightscapes			Lightscape & Night sky	2.7
P10	Soil, Water, & Nutrient Dynamics			Ocean/Physical Dynamics: Currents, Sea Level, Tides/Swell	2.7
M24	Marine Ecosystems	Intertidal	Community	Intertidal - Soft Bottom (sand beach, mudflat, mangrove)	2.6
M2	Marine Ecosystems	Benthic	Landscape	Benthic Habitats	2.6
P23	Water Quality			Ground Water Quality Supplemental parameters	2.6
P33	Water Quality			Surface Water Quality - macroinvertebrates	2.6
T3	Terrestrial Ecosystems	Vegetation	Landscape	Landscape Fragments, Patch Size, Land Cover	2.6
H15	Park Use & Activities			Reef Fisheries Harvest	2.6
M28	Marine Ecosystems	Intertidal	Population	Alien Incipient Invasives - Intertidal Marine	2.6
T15	Terrestrial Ecosystems	Vegetation	Population	Alien Incipient Plant Disease & Pathogens	2.6
T40	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Vertebrates	2.6
H1	Soundscapes			Alien, Natural, Human Soundscapes	2.6
M8	Marine Ecosystems	Benthic	Population	Coral Growth/Size and Age Structure, and Recruitment	2.6
T20	Terrestrial Ecosystems	Consumers	Community	Recovery/Change of Native Invertebrates Communities with Native Plant Restoration	2.5
P11	Soil, Water, & Nutrient Dynamics			Biogeochemical Cycles - Nutrient Cycling	2.5
T30	Terrestrial Ecosystems	Consumers	Population	Established Disease & Pathogens of Terrestrial Vertebrates	2.5
T31	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Disease & Pathogens of Terrestrial Vertebrates	2.5
M27	Marine Ecosystems	Intertidal	Population	Established Alien Species - Intertidal Marine	2.5
F1	Freshwater Ecosystems	Producers		Community dynamics of primary producers	2.5
M10	Marine Ecosystems	Benthic	Population	Alien Incipient Coral Disease & Pathogens	2.5
H13	Park Use & Activities			Culturally Significant Plant Harvest	2.5
T4	Terrestrial Ecosystems	Vegetation	Landscape	Fire Effects & Dynamics: Vegetation and Landscape Level	2.5
H8	Park Use & Activities			Marine Recreational Activities & Groundings/Anchor Damage	2.5
M17	Marine Ecosystems	Water column (motile)	Population	Established Alien Species - Water Column Marine	2.5
M5	Marine Ecosystems	Benthic	Community	Subtidal - Soft Bottom (sand flat, seagrass bed)	2.4

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T33	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Invasive Terrestrial Invertebrate Pests of natural systems	2.4
P19	Soil, Water, & Nutrient Dynamics			Groundwater dynamics	2.4
T32	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Feral Ungulates	2.4
T9	Terrestrial Ecosystems	Vegetation	Community	Recovery/Change of Native Vegetation with Feral Ungulate Control	2.4
M9	Marine Ecosystems	Benthic	Population	Established Coral Disease & Pathogens (including bleaching)	2.4
T1	Terrestrial Ecosystems	Vegetation	Landscape	Soil and Pollen Landscape History	2.3
P15	Soil, Water, & Nutrient Dynamics			Soil Quality- Physical	2.3
M25	Marine Ecosystems	Intertidal	Population	Intertidal Reef Fisheries / Collected species (limu, opiohi, crabs, fish, etc.)	2.3
P3	Climate & Air Quality			Atmospheric Gases: Climate Change Indicators, Human Pollutants, Natural-Volcanic	2.2
M23	Marine Ecosystems	Intertidal	Community	Intertidal - Hard Bottom	2.2
P5	Climate & Air Quality			Atmospheric Particulates: Climate Change Indicators, Human Pollutants, Natural-Volcanic	2.2
P43	Geology	Landforms		Cave Geology: non-karst	2.2
F3	Freshwater Ecosystems	Consumers	Population	Freshwater Animals Disease & Pathogen	2.2
M14	Marine Ecosystems	Water column (motile)	Population	Water Column Reef Fisheries	2.2
T39	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Terrestrial Invertebrates	2.2
P2	Climate & Air Quality			Atmospheric Deposition: Wet (direct & occult) and Dry	2.1
F4	Freshwater Ecosystems	Consumers	Population	Amphidromous Fauna Size-Age Structure, Reproduction and Recruitment	2.1
M21	Marine Ecosystems	Water column (motile)	Population	Alien Incipient Invasives - Water Column Marine	2.1
T2	Terrestrial Ecosystems	Vegetation	Landscape	Ecozone Boundaries	2.1
P42	Geology	Landforms		Cave Environmental conditions	2.0
T41	Terrestrial Ecosystems	Cave Systems	Community	Cave & lava tube communities	2.0
T38	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Fungi	2.0
P14	Soil, Water, & Nutrient Dynamics			Soil Quality- Chemical	1.9
H11	Park Use & Activities			Bio-prospecting Harvest	1.9
T36	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Terrestrial Invertebrate Pests (human structures)	1.9
M15	Marine Ecosystems	Water column (motile)	Population	Established Marine Animal (other than turtles) Disease & Pathogens	1.9
P36	Geology	Hazards		Seismicity of Non-Volcanic Origin	1.9
T10	Terrestrial Ecosystems	Vegetation	Community	Recovery/Change of Native Vegetation with Invasive Alien Invertebrate Control	1.8
T35	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Terrestrial Invertebrate Pests (agricultural)	1.8
P37	Geology	Hazards		Seismicity of Volcanic Origin	1.8
P9	Climate & Air Quality			Climate Representations - 2- & 3- dimensional	1.7
T11	Terrestrial Ecosystems	Vegetation	Population	Invertebrate Biocontrol of Plants	1.7
T24	Terrestrial Ecosystems	Consumers	Population	Herps (native)	1.7
T22	Terrestrial Ecosystems	Consumers	Population	Invertebrate Biocontrol of Invertebrates	1.7
P13	Soil, Water, & Nutrient Dynamics			Soil Quality - Biological	1.7
T12	Terrestrial Ecosystems	Vegetation	Population	Plant Pathogen Biocontrol of Plants	1.6
H14	Park Use & Activities			Culturally Significant Vertebrate Species Harvest	1.6
P38	Geology	Hazards		Mass Geologic Wasting	1.6
T5	Terrestrial Ecosystems	Vegetation	Landscape	Forest Dieback	1.5
P4	Climate & Air Quality			Marine Aerosols	1.4
P34	Geology	Hazards		Volcanic Unrest - Ground Deformation	1.4
P35	Geology	Hazards		Volcanic Unrest - Lava Flows	1.2
H10	Park Use & Activities			Subsistence Farming/Agriculture	1.2
H12	Park Use & Activities			Coral/Sand Mining Harvest	1.2
H17	Management Zones			Wilderness Areas - HAVO, HALE, other Unofficial	1.1
P40	Geology	Landforms		Dune Change (erosion & accretion)	0.9
P16	Soil, Water, & Nutrient Dynamics			Soil Crust Change (Arid-Semiarid habitats)	0.9
P44	Geology	Landforms		Cave Geology: karst	0.9
P41	Geology	Landforms		Permafrost on Big Island summits	0.0